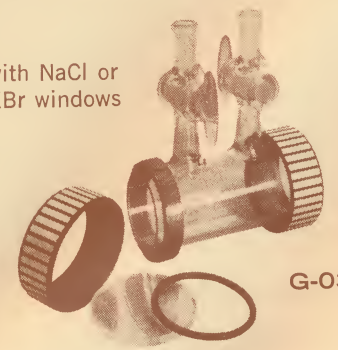
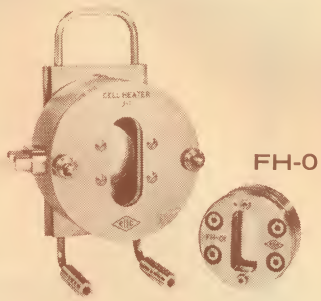
PYREX INFRARED 10 cm GAS CELL

with NaCl or KBr windows



G-03

HEATED IR CELL HEATING JACKET



FH-01

J-1

LIQUID IR CELL

Sealed or Demountable Versions

F-05

Wide range of path lengths and windows

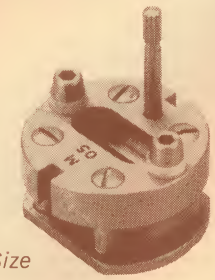
MINIMUM VOLUME 2 cm GAS CELL

Conforms to Beam

MV-212

MICROCELL

No Beam Condenser Needed



Actual Size

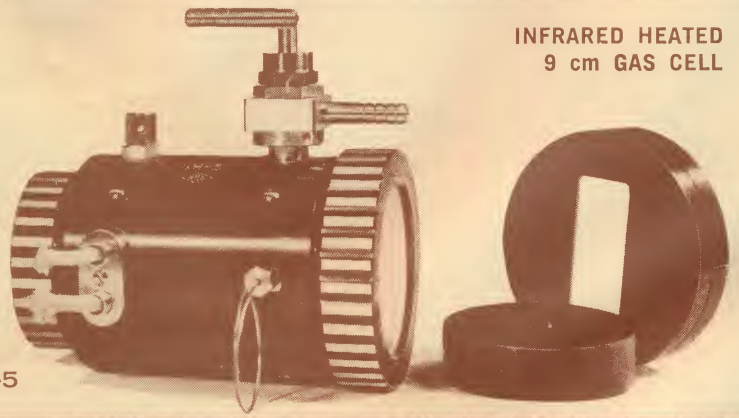
M-05

NUJOL IR CELL

with Quick Release Nuts

N-05

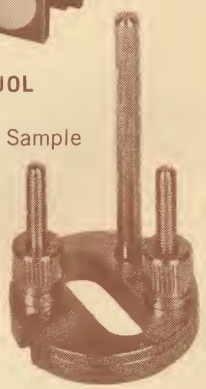
INFRARED HEATED 9 cm GAS CELL



GH-5

MICRONUJOL IR CELL

Conserves Sample



Actual Size

MN-05

INSTRUMENTAL IN ADVANCED RESEARCH...

a few of the finely crafted IR and UV cells and accessories designed to expedite scientific projects. Critically machined to extreme tolerances—you can depend on Limit instruments. Using a variety of materials such as Pyrex, Teflon, stainless steel, aluminum and pure nickel, Limit accessories are specifically created for functional use.

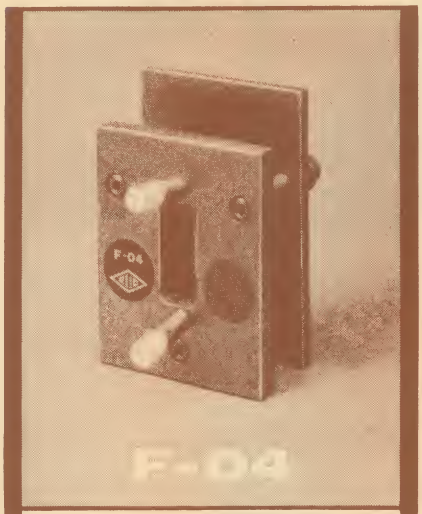
Write or phone for a handy fact file folder. You can keep it updated with latest data on the ever expanding line of Limit research instruments.

LIMIT

RESEARCH CORPORATION

BOX 852, DARIEN, CONN. (203) 655-3991

DEMOUNTABLE AND SEALED IR CELLS



THE BASIC TOOLS FOR IR ANALYSIS

Good spectroscopists deserve good accessories. Take these sealed IR cells for instance. Nothing fancy about them — just accuracy, precision and reliability. Path lengths from 7 microns upwards, in either sealed or demountable forms. Available fitted with most IR transmitting window materials. Immediate delivery of NaCl and KBr cells. F-05 suitable for Perkin-Elmer, Beckman, Unicam and Cary-White instruments—F-04 for Infracord only.

Used by leading scientists the world over

LIMIT
RESEARCH CORPORATION
Box 852, Darien, Conn.
Phone (203) 655-3991

Sealed IR Liquid Cells

Part No.	Description	F.O.B. Darien Price
F-05N	Amalgamated sealed cell with NaCl windows and two Teflon plugs for PE 21 series, Infracord, Beckman IR-4, 5, 7, 8 and 9. Specify path length from 0.007 — 2 mm	55.00
F-05K	Amalgamated sealed cell with KBr windows and two Teflon plugs for PE 21 series, Infracord, Beckman IR-4, 5, 7, 8 and 9. Specify path length from 0.007 — 2 mm	65.00

Demountable IR Liquid Cells

F-05NT	Demountable cell with NaCl windows and two Teflon plugs for PE 21 series, Infracord, Beckman IR-4, 5, 7, 8 and 9. Specify path length from 0.007 — 1 mm	55.00
F-05KT	Demountable cell with KBr windows and two Teflon plugs for PE 21 series, Infracord, Beckman IR-4, 5, 7, 8 and 9. Specify path length from 0.007 — 1 mm	65.00

Sealed and Demountable Cells for Infracord

F-04N	Amalgamated sealed cell with NaCl windows and two Teflon plugs for Infracord only. Specify path length from 0.007 — 2 mm	53.00
F-04K	Amalgamated sealed cell with KBr windows and two Teflon plugs for Infracord only. Specify path length from 0.007 — 2 mm	62.00
F-04NT	Demountable cell with NaCl windows and two Teflon plugs for Infracord only. Specify path length from 0.007 — 1 mm	53.00
F-04KT	Demountable cell with KBr windows and two Teflon plugs for Infracord only. Specify path length from 0.007 — 1 mm	62.00
R-21	Mount to adapt F-04 cells for use in PE-21 series	20.00

Spare Windows for Sealed and Demountable Cells

F-N	NaCl windows for all sealed and demountable cells, one pair*	30.00
F-K	KBr windows for all sealed and demountable cells, one pair*	40.00
F-CF	CaF_2 windows for all sealed and demountable cells, one pair*	115.00
F-BF	BaF_2 windows for all sealed and demountable cells, one pair*	155.00
F-CI	CsI windows for all sealed and demountable cells, one pair*	200.00
F-CB	CsBr windows for all sealed and demountable cells, one pair*	160.00
F-TBI	KRS-5 windows for all sealed and demountable cells, one pair*	195.00
F-IRT	Irtran-2 windows for all sealed and demountable cells, one pair*	125.00

*A pair consists of one drilled and one undrilled window

Terms — Net 30 days

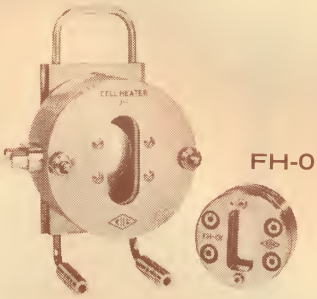
Note: All cells are nominally matched at designated path length. However, accurately matched cells can be specially ordered at an additional charge of $7.50 per pair.

PYREX INFRARED 10 cm GAS CELL

with NaCl or KBr windows

G-03

HEATED IR CELL HEATING JACKET



J-1

FH-01

LIQUID IR CELL

Sealed or Demountable Versions

F-05

Wide range of path lengths and windows

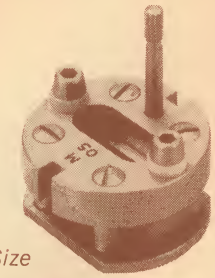
MINIMUM VOLUME 2 cm GAS CELL

Conforms to Beam

MV-212

MICROCELL

No Beam Condenser Needed



Actual Size

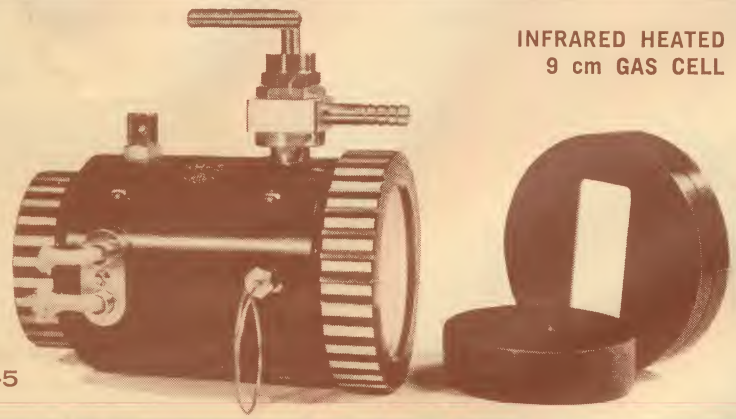
M-05

NUJOL IR CELL

with Quick Release Nuts

N-05

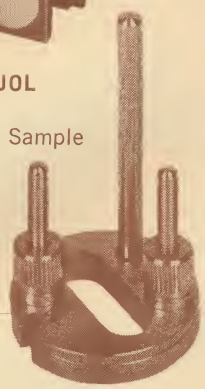
INFRARED HEATED 9 cm GAS CELL



GH-5

MICRONUJOL IR CELL

Conserves Sample



Actual Size

MN-05

INSTRUMENTAL IN ADVANCED RESEARCH...

a few of the finely crafted IR and UV cells and accessories designed to expedite scientific projects. Critically machined to extreme tolerances—you can depend on Limit instruments. Using a variety of materials such as Pyrex, Teflon, stainless steel, aluminum and pure nickel, Limit accessories are specifically created for functional use.

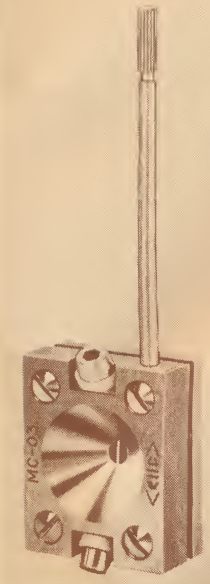
Write or phone for a handy fact file folder. You can keep it updated with latest data on the ever expanding line of Limit research instruments.

LIMIT

RESEARCH CORPORATION

BOX 852, DARIEN, CONN. (203) 655-3991

LOOKING FOR SOMETHING

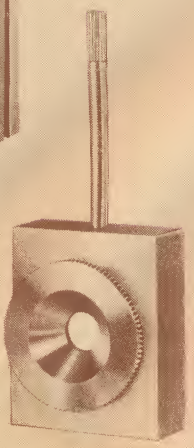


MICROSCOPE LIQUID CELL MC-03

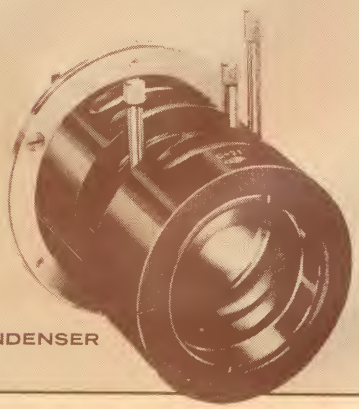
If you're looking for the spectrum of that speck of a sample whether solid, liquid or gas — then Limit has the instrument to find it.

The beam condenser has proved an important tool in infra-red technique. Limit condensers can be adjusted for lateral displacement and tilt of the cell with respect to the optical axis of the spectrophotometer. Can be easily taken apart and reassembled.

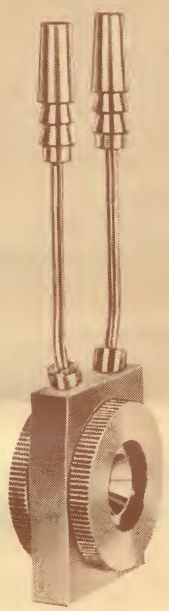
So with the microscope liquid cell, micro gas cell, micro disc or micro solids holder and the beam condenser you can analyze the spectrum no matter how small your sample.



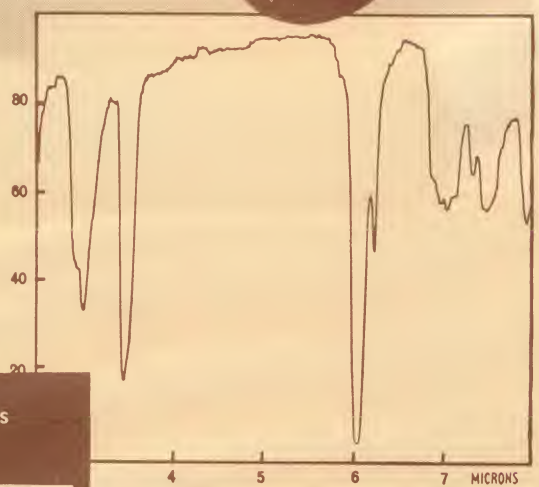
MICRO DISC HOLDER MD-02



BEAM CONDENSER C-21



MICRO GAS CELL MG-02



This is the spectrum of a micro quantity of an androgenic steroid in a 1 x 4 mm KBr disc using an MD-02 micro disc holder with a C-21 beam condenser.

All prices are F.O.B. Darien

Fine research instruments from Limit

LIMIT

RESEARCH CORPORATION

BOX 852, DARIEN, CONN.

PHONE (203) 655-3991

GOOD SPECTROSCOPISTS DESERVE LIMIT ACCESSORIES

Beam Condenser and Associated Accessories

New RIIC beam condensers are available for use with Perkin-Elmer model 21 and 137 series, Unicam models SP.100 and SP.200, and Beckman IR–5 and IR–8 series. These condensers have a condensation factor of approximately 4X and a transmission of the order of 50% through a 0.75×3.75mm aperture. The percentage transmission can, however, be increased to 100% by suitable attenuation of the reference beam with either the AT–01 or AT–02 beam attenuators described in a separate brochure.

In principle the beam condenser consists of two potassium bromide lenses specially mounted to permit fine adjustment along the optical axis by means of knurled focussing rings. A third lens, usually fixed, is also used in certain models. The condenser is provided with a sample carrier equipped with a knurled focussing ring as well as other controls which allow displacement of the sample along XYZ axes. Made in two halves, the beam condenser can readily be taken apart and re-assembled. Another feature of the condenser, which is of great practical value, is the provision for adjusting the lateral displacement and tilt of the unit with respect to the optical axis of the spectrophotometer. This enables the best possible performance to be obtained from the condenser when used in any given instrument.

The sample carrier is designed to carry a variety of accessories such as the microscope liquid cell MC–03, microgas cell MG–02, KBr disc holder MD–02, and micro-solids holder MS–02. The microscope cell MC–03 has a volume of 0.0004ml at 0.1mm path-length and is rectangular in shape. The microgas cell MG–02 has a path-length of 8mm and a volume of 0.15ml. This is a demountable cell made in stainless steel with two filling tubes terminating in B–5 stainless steel cones. The disc holder MD–02 accepts discs of 13mm diameter. Smaller samples can be mounted on a 13mm. diameter paper or metal frame and held in the disc holder. The micro-solids holder MS–02 is designed to hold small films, fibres, and similar solid samples of limited size.

Part No.	Description	Price
C-21	Beam Condenser for PE 21 and 137 series, Beckman IR-5, 5A and 8, and Unicam SP-200	420.00
MC-03N	Microscope liquid cell with NaCl windows to fit C-21 condenser. Specify path length from 0.007 to 1 mm	130.00
MC-03K	Microscope liquid cell with KBr windows to fit C-21 condenser. Specify path length from 0.007 to 1 mm	135.00
MC-N	Spare NaCl windows for MC-03, one pair*	20.00
MC-K	Spare KBr windows for MC-03, one pair*	24.00
M-FT	Spare flushing tube	5.00
M-SH	Spare Luer lock syringe holder	4.00
M-SN	Spare syringe needles, pack of 12	2.50
M-SP	Spare stainless steel plugs, one pair	4.00
MG-02N	Micro gas cell with NaCl windows to fit C-21 condenser	80.00
MG-02K	Micro gas cell with KBr windows to fit C-21 condenser	85.00
MG-N	Spare NaCl windows for MG-02, one pair	15.00
MG-K	Spare KBr windows for MG-02, one pair	20.00
MG-R	Spare seals for MG-02, one pair	2.00
MD-02	Micro disc holder to fit C-21 condenser	30.00
C-21L	Large bi-convex KBr lens for C-21	100.00
C-21S	Small bi-convex KBr lens for C-21	55.00
C-21C	Cylindrical KBr lens for C-21	40.00

Variable Temperature IR Unit

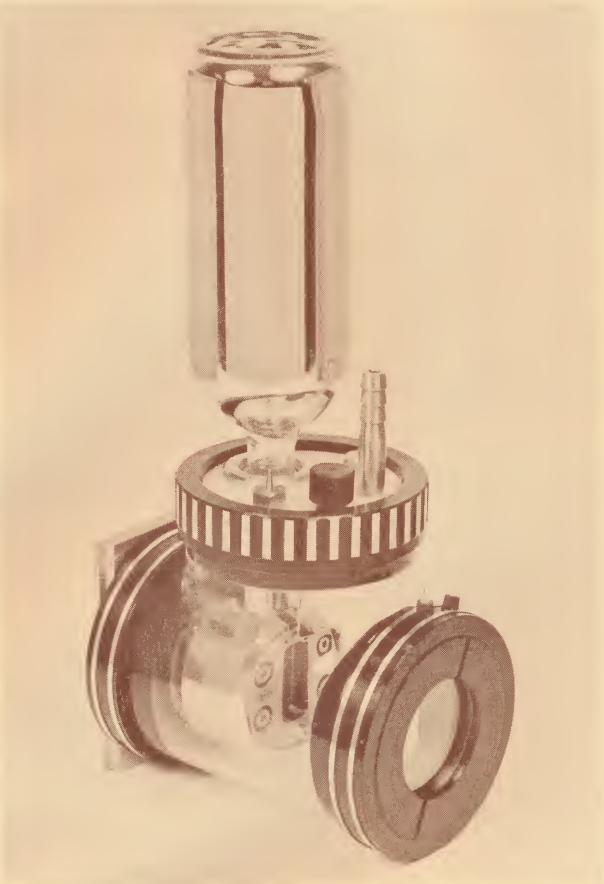
The new variable temperature IR unit — V-LTJ — has been designed for the study of solids and liquids in the temperature range −185°C to +100°C. This versatile instrument has the additional facility of maintaining any intermediate temperature to better than 0.1°C.

The unit consists of three distinct parts: the outer jacket, the variable temperature cell holder, and the cell. The jacket is in the form of a Pyrex "T" piece with demountable windows, vacuum sealed into electrically heated holders at the two open ends. The heating ensures that no atmospheric moisture condenses on the windows. The central aperture accommodates the cell mount, and in use the jacket is maintained at a moderate vacuum. NaCl windows are supplied as standard.

For temperatures below ambient the hollow cell mount is connected via a specially heated leak valve to a laboratory backing pump. To the inlet of the mount is attached a Pyrex tube which dips into a Dewar flask containing refrigerant. By adjusting the leak valve any temperature below ambient can be reached in a few minutes and maintained to better than 0.1°C. For elevated temperatures the electric heater wound on the stem of the cell holder is brought into operation and by means of a Variac or energy regulator any temperature up to 100°C can be reached and maintained.

The cell for this unit can also be used in RIIC heating jackets for measurements above 100°C. The cell is of a sandwich type, the windows being held under powerful spring pressure. Any IR transmitting windows can be supplied for use in this cell though materials prone to cleave when subjected to thermal shock are not recommended. Ideal windows include AgCl, CsBr, CsI, and KRS-5. In standard form the cell is fitted with high quality monocrystalline AgCl windows. Provision is made in the cell construction for monitoring temperature by means of the iron-constantan thermocouple provided with the instrument.

The cell fits into a circular opening in the cell mount and is axially aligned with the two jacket windows. After a low temperature experiment the cell temperature can be raised from −185°C to room temperature in a few minutes without endangering the windows or risking fogging. The sample can then be recovered and a further experiment performed. No other utilities save a backing pump and electrical supply are needed for the successful operation of this most versatile accessory.



PART NUMBERS

V-LTJ	Variable temperature IR unit, complete.
FH-01Ag	Absorption cell with AgCl windows and Teflon spacer.
V-TCH	Variable temperature cell holder.
LTJ-1	Outer jacket with NaCl windows.
LTJ-N	Spare NaCl windows for outer jacket, one pair.
FH-Ag	Spare AgCl windows for cell, one pair.
FH-TC	Iron-constantan thermocouple, one yard.

Right is reserved to alter any specifications without notice.

F.O.B. Darien

LIMIT
RESEARCH CORPORATION • P. O. BOX 852, DARIEN, CONNECTICUT
Telephone: Area Code 203 655-3391

Throwaway Infrared Liquid Cells*

With the introduction of Throwaway IR Liquid Cells, no longer is it necessary for analytical laboratories to maintain an extensive range of conventional sealed cells. One pack of assorted path length cells serves the purpose at a fraction of the cost.

This unique cell with AgCl windows, called the TAC-1, is designed for use with Perkin-Elmer 21 and Infracord 137 series, Unicam SP 200, Beckman IR 5, 5A and 8. When used with Beckman 4, 7 and 9, some vignetting will be evident.

The Throwaway Cell, including the two ports, is made from a single piece of silver chloride film, fused and protected by thermosetting plastic covers. Thus the sample comes in contact only with AgCl. An inlet and outlet insure rapid and convenient filling of the cell. Simply insert a hypodermic needle into inlet and fill with sample. To seal, the ports may be plugged or warmed and snipped. Flushing is quickly accomplished with a compressed air line. The TAC-1 has a volume of 0.005 ml at 0.1 mm path length, the volumes for other path lengths being pro rata. Although identical in construction, each cell is color coded for immediate recognition of path length. Color coded path lengths available are Ivory 0.025, Red 0.05, Orange 0.1, Yellow 0.2, Green 0.5 and Blue 0.1 mm.

TAC-1 cells are transparent up to the transmission limit of AgCl, i.e. over 22 microns and can be used with practically all aqueous and non-aqueous samples. Extreme care in design and manufacture insures the parallelism of cell windows, as well as good tolerance between the actual and nominal path length. The normal fringe method, however, may be employed for accurate determination of path length in all cells.

Low in cost, these cells are also extremely economical in the amount of sample required. The convenience and economy of these cells prove of maximum value when studying viscous or obnoxious samples which are difficult to flush out. TAC-1 cells are supplied in packets of ten in any one given path length in the 0.025 to 1.0 mm range listed or in a standard assortment of all six path lengths as listed.

Although termed "Throwaway", many scientists report they have reused one TAC-1 cell successfully as many as ten times.

Actual Size of Throwaway IR Liquid Cells TAC-1

The TAC-1 cell measures approximately 3/8 × 15/16 × 3/16 inch overall, excluding the filling tubes. It has an aperture of 2 × 14 mm.

PART NUMBERS		Price F.O.B. Darien
TAC-1	Throwaway IR AgCl cells. Specify one of these path lengths: 0.025, 0.050, 0.1, 0.2, 0.5 and 1.0 mm. Packet of 10	$25.00
TAC-1A	Throwaway IR AgCl cells, standard assortment containing two each of 0.025, 0.05, 0.1 and 0.2 mm and one each of 0.5 and 1.0 mm path lengths. Packet of 10	$25.00
TP-1	Holder for Throwaway cell to fit P-E model 21 series	$31.00
TI-1	Holder for Throwaway cell to fit P-E model 137 Infracord series	$29.00
TB-1	Holder for Throwaway cell to fit Unicam SP-200 and Beckman IR 4, 5, 5A, 7, 8 and 9	$35.00

*Patent applied for.

LIMIT

RESEARCH CORPORATION ■ GOOD SPECTROSCOPISTS DESERVE LIMIT ACCESSORIES

NaCl and KBr Window Polishing Kit

There's no need to impede your research results with fogged or scratched windows. Recondition them with this convenient polishing kit. It's the next best thing to the costly, complicated, laborious pitch lap method not practicable in most infrared laboratories.

With this complete PK-01 kit, rock salt and KBr windows can be polished flat to less than five fringes of Hg green line quickly, easily.

The compact case contains everything for grinding, polishing and buffing windows. There's a glass roughing lap, a specially curved smoothing lap and a velvet polishing lap. The kit also includes an optical flat for testing window flatness, a spare velvet strip, a plastic squeeze bottle of polishing rouge and one of denatured alcohol, as well as a sponge for cleaning the laps.

Other than the rouge, no abrasives are used so no precaution is necessary to avoid harmful transfer of grit into the rouge and polishing lap. Detailed, easy to follow instructions for optimum grinding and polishing results are included.

The handsome, custom-made hinged wooden chest measures 5⅝ × 6⅞ × 10½ inches. Quite sturdy, the kit fitted with all its accessories weighs 10 pounds.

Complete Kit for Reconditioning Windows

PART NUMBERS

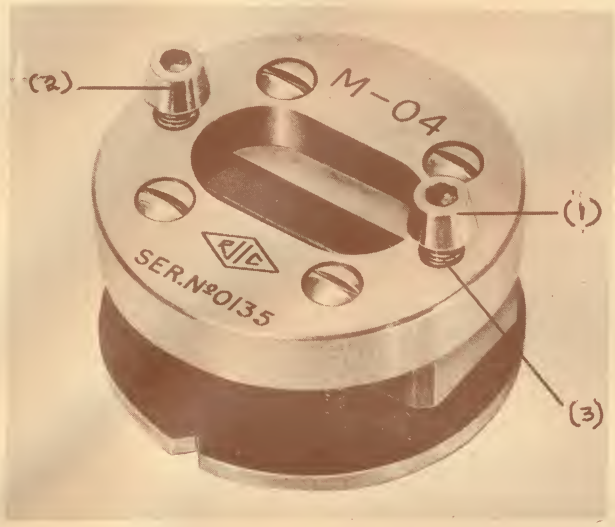
		Price F.O.B. Darien
PK-01	NaCl and KBr polishing kit complete with roughing, smoothing and polishing laps, optical flat, spare velvet strip, rouge, alcohol and sponge	$70.00
PK-1	Spare velvet for polishing lap	$ 2.50
PK-2	Spare glass for grinding lap	$23.00
PK-3	Spare optical flat	$ 4.50
PK-4	Spare plastic container	$ .60
PK-5	Spare cleaning sponge	$ .75
PK-6	Polishing rouge, 1 pound tin	$ 4.00
PK-7	Spare glass plate for polishing lap	$ 4.00
PK-8	Plain velvet strip	$ 1.00

Right is reserved to alter prices and specifications without notice.

LIMIT RESEARCH CORPORATION ■ P. O. BOX 852, DARIEN, CONN. 06821 PHONE (203) 655-3991

INSTRUCTIONS

M-04/M-05/M-06 MICROCELLS



Each M-04, M-05 and M-06 Microcell is supplied with:

One hypodermic needle
One Luer lock syringe holder
One flushing tube
One Allen key

To fill the cell:

Using the key, remove one steel plug (1) and partially unscrew the second plug (2). There is no need to take out this second plug. The grooves in the side of the plug act as a vent.

Fit the hypodermic needle to a Luer syringe. Take up sufficient liquid and gently insert the needle into the filling port (3) until it reaches the lower window.

Allow the liquid to run into the cell, then withdraw the needle when the aperture is filled.

Screw home both steel plugs with the key. The cell is now ready for use.

Recovery of Sample and Flushing:

Remove both steel plugs (1) and (2). Screw in the Luer lock syringe holder and the flushing tube.

Place an empty Luer syringe into the Luer lock holder and recover the sample by pushing air into the cell.

Solvent can be used instead of air to flush the cell as detailed above.

Microcell Windows

		Price
M-4N	NaCl windows for M-04N, one pair*	24.00
M-4K	KBr windows for M-04K, one pair*	26.00
M-5N	NaCl windows for M-05N, one pair*	22.00
M-5K	KBr windows for M-05K, one pair*	24.00
M-6N	NaCl windows for M-06N, one pair*	22.00
M-6K	KBr windows for M-06K, one pair*	24.00

*A pair consists of one drilled and one undrilled window

Microcell Spacers

M-4S	Lead spacers for M-04 cells, pack of 12. Specify thickness: 0.007, 0.012, 0.018, 0.025, 0.05, 0.075, 0.10, 0.125, 0.15, 0.175, 0.2, 0.5 and 1.0 mm	4.00
M-4SA	Assorted lead spacers, for M-04 cells, pack of 26. Two each of the following thicknesses: 0.007, 0.012, 0.018, 0.025, 0.05, 0.075, 0.10, 0.125, 0.15, 0.175, 0.2, 0.5 and 1.0 mm	8.00
M-5S	Lead spacers for M.05 cells, pack of 12. Specify thickness: 0.007, 0.012, 0.018, 0.025, 0.05, 0.075, 0.10, 0.125, 0.15, 0.175, 0.2, 0.5 and 1.0 mm	4.00
M-5SA	Assorted lead spacers for M.05 cells, pack of 26. Two each of the following thicknesses. 0.007, 0.012, 0.018, 0.025, 0.05, 0.075, 0.10, 0.125, 0.15, 0.175, 0.2, 0.5 and 1.0 mm	8.00
M-6S	Lead spacers for M-06 cells, pack of 12. Specify thickness: 0.007, 0.012, 0.018, 0.025, 0.05, 0.075, 0.10, 0.125, 0.15, 0.175, 0.2, 0.5, and 1.0 mm	4.00
M-6SA	Assorted lead spacers for M-06 cells, pack of 26. Two each of the following thicknesses: 0.007, 0.012, 0.018, 0.025, 0.05, 0.075, 0.10, 0.125, 0.15, 0.175, 0.2, 0.5, and 1.0 mm	8.00

Microcell Gaskets and Accessories

M-4F	Front gaskets for M-04 cells, pack of 12	4.00
M-4R	Rear gaskets for M-04 cells, pack of 12	4.00
M-5F	Front gaskets for M.05 cells, pack of 12	4.00
M-5R	Rear gaskets for M-05 cells, pack of 12	4.00
M-6F	Front gaskets for M-06 cells, pack of 12	4.00
M-6R	Rear gaskets for M-06 cells, pack of 12	4.00
M-FT	Spare flushing tube for all microcells	5.00
M-SH	Spare Luer lock syringe holder for all microcells	4.00
M-SN	Syringe needles for all microcells, pack of 12	2.50
M-SP	Spare stainless steel plugs for all microcells, one pair	4.00

LIMIT
RESEARCH CORPORATION ■ P. O. BOX 852, DARIEN, CONN. 06821 PHONE (203) 655-3991

Variable IR Cells and Parts Price List

Variable Path Length IR Cells

Part No.	Description	Price
SR-05N	0 — 3 mm stainless steel variable cell complete with NaCl windows and Teflon plugs, to fit all Perkin-Elmer and all Beckman spectrophotometers, the Cary 90 and Unicam SP-200	$300.00
SR-05K	0 — 3 mm stainless steel variable cell complete with KBr windows and Teflon plugs, to fit all Perkin-Elmer and all Beckman spectrophotometers, the Cary 90 and Unicam SP-200	310.00
PE-1N	0 — 6 mm stainless steel variable cell complete with NaCl windows and Teflon plugs, to fit all Perkin-Elmer and all Beckman spectrophotometers, the Cary 90 and Unicam SP-200	350.00
PE-1K	0 — 6 mm stainless steel variable cell complete with KBr windows and Teflon plugs, to fit all Perkin-Elmer and all Beckman spectrophotometers, the Cary 90 and Unicam SP-200	360.00
VT-01N	0 — 5 mm stainless steel variable cell lined with Teflon complete with NaCl windows, to fit all Perkin-Elmer and all Beckman spectrophotometers, the Cary 90 and Unicam SP-200	440.00
VT-01K	0 — 5 mm stainless steel variable cell lined with Teflon complete with KBr windows, to fit all Perkin-Elmer and all Beckman spectrophotometers, the Cary 90 and Unicam SP-200	450.00

Spare Windows for all Stainless Steel Variable IR Cells

R-N	NaCl windows for all stainless steel variable cells, one pair*	45.00
R-K	KBr windows for all stainless steel variable cells, one pair*	55.00
R-S	Fused silica windows for all stainless steel variable cells, one pair*	135.00
R-CF	CaF_2 windows for all stainless steel variable cells, one pair*	170.00
R-BF	BaF_2 windows for all stainless steel variable cells, one pair*	190.00
R-CI	CsI windows for all stainless steel variable cells, one pair*	235.00
R-CB	CsBr windows for all stainless steel variable cells, one pair*	220.00
R-TBI	KRS-5 windows for all stainless steel variable cells, one pair*	250.00

*A pair consists of one plain and one flanged window

Spare Windows for Teflon Lined Variable IR Cells

RT-N	NaCl windows for Teflon lined variable cells, one pair**	55.00
RT-K	KBr windows for Teflon lined variable cells, one pair**	70.00
RT-S	Fused silica windows for Teflon lined variable cells, one pair**	165.00
RT-CF	CaF_2 windows for Teflon lined variable cells, one pair**	200.00
RT-BF	BaF_2 windows for Teflon lined variable cells, one pair**	220.00
RT-CI	CsI windows for Teflon lined variable cells, one pair**	265.00
RT-CB	CsBr windows for Teflon lined variable cells, one pair**	250.00
RT-TBI	KRS-5 windows for Teflon lined variable cells, one pair**	280.00

**A pair consists of two flanged windows

Spare Parts for All Variable IR Cells

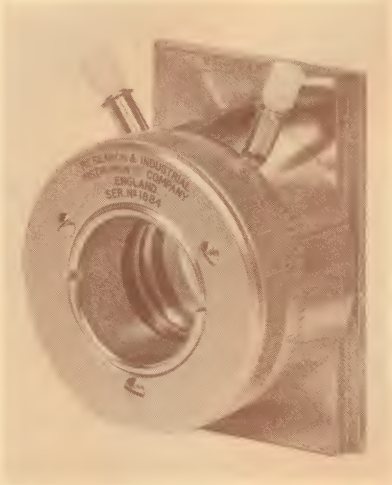
R-51	Teflon plugs, pack of six	3.00
R-61	Neoprene washers for all variable IR cells, pack of 12	2.00
R-7	Teflon washers as an alternative to R-61, pack of 2	6.00
R-8	Spare key for all variable IR cells	1.00

Right is reserved to alter prices and specifications without notice.

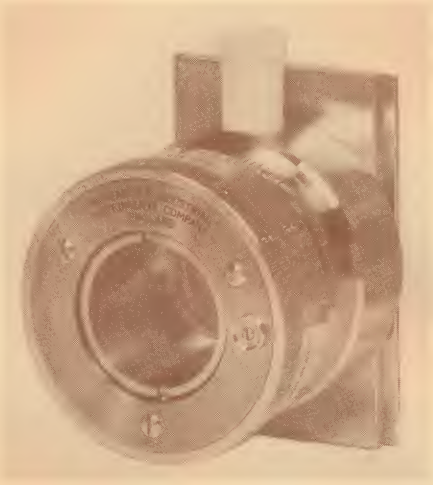
All prices are F.O.B. Darien, terms net 30 days.

LIMIT
RESEARCH CORPORATION ■ P. O. BOX 852, DARIEN, CONN. 06821 PHONE (203) 655-3991

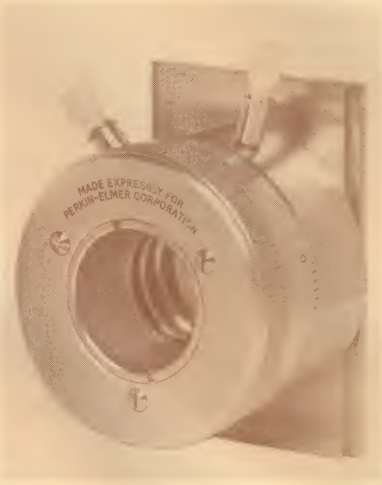
Variable Path Length Infrared Cells



SR-05



VT-01



PE-1

Scientists and spectrophotometer manufacturers here and abroad endorse these top quality variable path length cells for optimum service in IR studies. They are indispensable for compensation of absorption bands of solvents, for quantitative and differential work, for accurately changing the sample thickness to resolve important features of the spectrum, and for determining working curves.

Three types of variable IR cells are currently available from Limit. The stainless steel SR-05 has a path length of 0 - 3 mm. The PE-1 cell, also in stainless steel, has a path length range of 0 - 6 mm. The Teflon lined VT-01 cell has a variable path length of 0 - 5 mm. All three types can be used with all Perkin-Elmer and Beckman spectrophotometers, as well as with the Cary 90 and Unicam SP-200.

Windows normally supplied with variable cells are NaCl or KBr. However, fused silica, CaF_2, BaF_2, CsBr, CsI, KRS-5 and Irtran-2 are available on special order.

Stainless Steel Variable Cells — SR-05 and PE-1

Stainless steel cells can be specified with either 0 - 3 mm or 0 - 6 mm path length range. Both types, the SR-05 and the PE-1, have these outstanding features in common:

- Cell aperture is one inch in diameter
- Path length can be set and read directly to 0.5 micron
- Windows, one plain and one flanged, remain parallel to better than 10 fringes of Hg green line when path length is altered
- Repeatability of path length setting is better than 1.5 microns at all path lengths
- Cell volume is given by $V = 1 + 1.6T$ where V is the cell volume in ml and T is path length in mm
- Cells are perfectly sealed with a Teflon sleeve
- Cells are readily dismantled, cleaned and reassembled without loss of accuracy
- An adjustable stop prevents damage to windows through accidental clashing
- Filling ports are fitted with Luer lock syringe holders

Teflon Lined Variable Cell — VT-01

This VT-01 cell is lined throughout with Teflon so the liquid sample comes in contact only with Teflon and the windows. The cell has a variable path length of 0 - 5 mm which can be set and read to 0.6 micron. Cell aperture is one inch in diameter.

Teflon lined variable cells duplicate the essential features and accuracy of the stainless steel cells. However the VT-01 has two flanged windows and one Teflon filling port with a Teflon reservoir.

Cell volume is given by $V = 0.75 + 1.2T$ where V is the volume in ml and T is the path length in mm. VT-01 cells are available with NaCl or KBr windows, or on special order fitted with any of the materials listed overleaf.

Have you tried the new Throwaway IR cells yet? Scientists like these low cost easy-to-use cells for most of their liquid sampling. Just fill the cell, use it, throw it away. Transparent to 25 microns, specify .025, .05, 0.1, 0.2, 0.5 or 1.0 mm path length or a standard assortment. Either way; a box of ten TAC-1 cells costs just $25.00. Simplify and speed your infrared studies with these AgCl cells. For same day shipment, phone (203) 655-3991. Or for a data sheet on the TAC-1 Throwaway Cell write: Limit Research Corporation 557 Post Road, Darien, Conn.